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In the United States Patent and Trademark Office

Appellants:	Jian Qin et al.	Docket No.:	15,105.1
Serial No.:	10/810,977	Group:	3761
Confirmation No:	9633	Examiner:	Jacqueline F. Stephens
Filed:	March 25, 2004	Date:	September 24, 2007
For:	Permanently Wettable Superabsorbents		

Brief on Appeal to the Board of Patent Appeals and Interferences

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Sir:

Pursuant to 37 C.F.R. 41.37 Appellants respectfully submit this Brief in support of their Appeal of Examiner Stephen's **Final Rejection** of claims 22 - 36 which was mailed on March 23, 2007.

On June 22, 2007, Appellants, pursuant to 37 C.F.R. 41.31 mailed a timely Notice of Appeal. The Notice of Appeal was received by the Office on June 28, 2007. Thus, this Appeal Brief is timely filed on Monday, September 24, 2007 with a petition for a one (1) month extension of time.

Real Party in Interest

The present Application has been assigned to Kimberly-Clark Worldwide, Inc.

Related Appeals and Interferences

There are no related appeals and/or interferences with regard to the present Application.

Status of Claims

Claims 22 - 36 remain in the application with claims 22 - 36 being finally rejected. Claims 1 - 21 and claims 37 - 39 were previously canceled. The appealed claims include 22 - 36 and appear in the CLAIMS APPENDIX of this Brief.

K-C Docket No.: 16,105.1
Serial No.: 10/810,977

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SEP 24 2007

Status of Amendments

There were no amendments filed after the Final Rejection with regard to the present Application.

Summary of Claimed Subject Matter

The following concise explanation of the subject matter defined in each of the independent claims involved in the appeal refers to the page and line numbers of the Specification filed on March 25, 2004. While the following summary correlates claim elements to specific embodiments described in the application specification, it does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding of the subject matter of this appeal.

Generally, the present invention is directed to permanently wettable superabsorbent materials.

Independent claim 22 is directed to a permanently wettable superabsorbent material comprising a superabsorbent material and a surfactant (e.g., Specification at page 2 lines 8-10 and page 3 lines 25-29). The surface of the superabsorbent material is hydrophobic (e.g., Specification at page 3 lines 13-14 and page 4 lines 10-11). The surfactant has at least one reactive functional group that is reactive with the superabsorbent material and at least one non-reactive functional group that is non-reactive with the superabsorbent material (e.g., Specification at page 2 lines 10-12 and page 6 lines 25-27). In addition, the surfactant has been applied to the superabsorbent material as a surfactant solution, where the surfactant solution includes an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material (e.g., Specification at page 2 lines 18-20 and page 5 lines 7-13).

Independent claim 34 is directed to a permanently wettable superabsorbent fiber comprising a superabsorbent fiber and a surfactant (e.g., Specification at page 2 lines 8-10 and page 3 lines 17-20). The superabsorbent fiber has a hydrophobic surface (e.g., Specification at page 3 lines 13-14 and page 4 lines 10-11). The surfactant has at least one reactive functional group that is reactive with the superabsorbent fiber and at least one non-reactive functional group that is non-reactive with the superabsorbent fiber (e.g., Specification at page 2 lines 10-12 and page 6 lines 25-27). In addition, the surfactant has been applied to the superabsorbent fiber as a surfactant solution, where the surfactant

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

solution includes an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent fiber to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent fiber, but less than sufficient to cause significant swelling of the superabsorbent fiber (e.g., Specification at page 2 lines 18-20 and page 5 lines 7-13). Furthermore, the surfactant is applied to the superabsorbent fiber when the surface is activated by increasing an amount of the at least one reactive functional group available to react at the hydrophobic surface of the superabsorbent fiber (e.g., Specification at 5 lines 3-20).

Grounds of Rejection to be Reviewed on Appeal

Ground 1

Claims 22-26, 27, 29-32, 34, and 35 were rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent No. 3,989,586 issued to Bashaw et al. in view of U.S. Patent No. 5,494,611 Issued to Howe.

Ground 2

Claims 28, 33, 36, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,989,586 issued to Bashaw et al. in view of U.S. Patent No. 5,494,611 issued to Howe, as applied to claims 22 and 34 above and further in view of U.S. Patent No. 6,217,890 Issued to Paul.

Argument

1. Claims 22-26, 27, 29-32, 34, and 35 are not unpatentable over U.S. Patent No. 3,989,586 Issued to Bashaw et al. (hereinafter "Bashaw") in view of U.S. Patent No. 5,494,611 issued to Howe (hereinafter "Howe").

As to claims 22, 24-26, 34, and 35, the Office believes Bashaw discloses a permanently wettable superabsorbent material and method of making the absorbent comprising: treating the superabsorbent material with a surfactant solution (col. 2, lines 9-11; col. 4, lines 35-68). The Office believes Bashaw discloses the crosslinked copolymer is further activated with methanol, dried and processed in fiber form (col. 4, lines 1-21). The Office also believes the surfactant solution includes an amount of water sufficient to solvate the surface of the superabsorbent material but less than sufficient to cause significant swelling of the superabsorbent material (col. 4, lines 1-5). Further, the Office believes Bashaw discloses surfactants (col. 4, lines 35-68) similar to the surfactants taught in the present specification page 6, line 25 through page 7, line 7. In particular, the Office believes Bashaw discloses

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

cetyl dimethylamine oxide. The Office believes Howe shows that cetyl dimethylamine oxide is an equivalent structure known in the art of lauryl dimethylamine oxide (Howe col. 4, lines 48-61). Additionally, the Office believes that since these two surfactants are art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute cetyl dimethylamine oxide for lauryl dimethylamine oxide, which applicant discloses is a suitable surfactant having the claimed functional groups.

Regarding the Flotation Time procedure and the Surface Tension Test and the Office's interpretation of the tests and performance characteristics of the instant apparatus claims, the Office believes that because the structure recited in the reference is substantially identical to that of the claims of the instant invention, the test claimed properties or functions are presumed to be obvious.

As to claim 23, the Office believes Bashaw discloses the superabsorbent material is a fibrous form (col. 2, lines 6-45).

As to claim 27, the Office directs Applicants to Bashaw col. 2, lines 6-8.

As to claim 29, the Office directs Applicants to Bashaw col. 4, lines 35-68.

As to claim 30, the Office directs Applicants to Bashaw col. 2, lines 57-59 and col. 4, lines 21-29.

As to claim 31, the Office directs Applicants to Bashaw Example 1.

As to claim 32, the Office believes Bashaw discloses the surfactant is applied to the superabsorbent material when the superabsorbent material is in powder form, which the Office interprets to be in a solvated state, as the copolymer is solubized in the solvent to form the powdered copolymer (col. 5, lines 23-27).

a. Claims 22-26, 27, 29-32, 34, and 35 are not obvious over Bashaw in view of Howe.

In order for the Office to show a prima facie case of obviousness, M.P.E.P. §2143 requires that the Office must meet three criteria: (1) the prior art references must teach or suggest all of the claim limitations; (2) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to combine the references, and (3) there must be some reasonable expectation of success. Applicant's respectfully submit that the Office has failed to meet its burden under (1), (2) and (3) as the prior art references do not teach or suggest all of the claim limitations; there is no suggestion or motivation to combine Bashaw with Howe in order

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

to modify Bashaw to arrive at applicant's recited invention; and there is not a reasonable expectation of success.

i. The use of hindsight reconstruction is not appropriate.

It seems clear that the Office is attempting to utilize the teachings of Applicants as a template to combine Bashaw and Howe in an attempt to arrive at Applicants' invention. Applicants respectfully note that M.P.E.P. § 2143 requires that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure. *In re Vaeck*, 947 F.2d 4899 (Fed. Cir. 1991). It is inappropriate to pick and choose isolated elements from various prior art references and combine them so as to yield the invention in question when such combining would not have been an obvious thing to do at the time in question. *Panduit Corporation v. Dennison Manufacturing Company*, 227 USPQ 337 (Fed. Cir. 1985). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127. *In re Fritch*, 23 USPQ 2nd 1780, 1783-1784 (Fed. Cir. 1992). It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Gorman*, 933 Fed. 2nd 982, 987, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991). *In re Fritch*, 23 USPQ 2nd 1780 at 1784 (Fed. Cir. 1992). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 Fed. 2d at 1075, 5 USPQ 2d at 1600. *In re Fritch*, 23 USPQ 2nd 1780 at 1784 (Fed. Cir. 1992). It is also well established that a prior art reference must be evaluated as an entirety and that the prior art must be evaluated as a whole. *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983). Where neither any reference considered in its entirety, nor the prior art as a whole, suggests the combination claimed, the invention is non-obvious. *Fromson v. Advance Offset Plate, Inc.*, 225 USPQ 26 (Fed. Cir. 1985). Thus, the Office's use of Bashaw and Howe based on the knowledge gained from Applicants is improper.

ii. Requirement (1) of the test under M.P.E.P. §2143 has not been met.

In general, the present invention is directed to a permanently wettable superabsorbent material (e.g., Specification at page 2 lines 8-10 and page 3 lines 25-29). In some aspects, the superabsorbent material is in the form of a superabsorbent fiber (*Id.*). The surface of the superabsorbent material is hydrophobic (e.g., Specification at page 3 lines 13-14 and page 4 lines 10-11). The permanently wettable superabsorbent material also comprises a surfactant (e.g., Specification at page 2 lines 8-10 and page 3 lines 25-29). The surfactant has at least one reactive functional group that is reactive with the superabsorbent material and at least one non-reactive functional group that is non-reactive with the

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

superabsorbent material (e.g., Specification at page 2 lines 10-12 and page 6 lines 25-27). In addition, the surfactant has been applied to the superabsorbent material as a surfactant solution, where the surfactant solution included an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material (e.g., Specification at page 2 lines 18-20 and page 5 lines 7-13). The result is a superabsorbent material that, although previously hydrophobic, is now permanently wettable, even after several washings with isopropanol (e.g., Specification page 12 lines 3-25, and Table 1 Sample No. 8).

In contrast, the invention of Bashaw is directed to a sorptive paper product, and not to a superabsorbent material *per se* (e.g., Bashaw col. 1 lines 55-60). More particularly, the invention of Bashaw is directed to a method for mixing a dispersion of a copolymer in its acid form¹ (i.e., a carboxylic anhydride moiety, such as maleic anhydride copolymer) into a cellulosic pulp slurry of standard consistency (Bashaw, col. 2 lines 19-22). An aqueous surfactant solution is utilized to help disperse and distribute the copolymer (in its acid form) in the papermaking furnish or pulp slurry (Bashaw col. 2 lines 1-5). In preferred embodiments, particles of the copolymer (in its acid form) are dispersed in an aqueous solution of a suitable surfactant to form a dispersion, which is then mixed with the suspension of cellulosic fibers as described above (Bashaw col. 2 lines 7-12). In an alternative embodiment, the dispersion is filtered, dried and the dry polymer (in its acid form) is mixed into the papermaking furnish (Bashaw col. 2 lines 14-16). Bashaw teaches that the surfactant solution is an aqueous solution which contains between about 0.002 to about 5 percent by weight of surfactant based on the weight of the aqueous fluid (Bashaw col 4 lines 42-46).² Once the copolymer (in its acid form) has been mixed with the pulp slurry, the mixture is processed on a paper machine to form paper, paper board or molded pulp products (Bashaw col. 2 lines 19-24). The paper or molded pulp product is then dried sufficiently (Bashaw col. 2 lines 47-48). The dried paper product is then treated with an alkaline agent to convert the carboxylic anhydride moieties of the copolymer (i.e., copolymer in its acid form) into an ammonium or alkali metal salt form whereby the lightly cross-linked copolymer, while remaining water-insoluble, becomes highly water-swellaable (i.e., becomes a superabsorbent material) (Bashaw col. 2 lines 48-53). Thereafter, the paper product containing the water-swellaable salt form of the

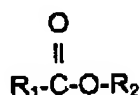
¹ The copolymer, when in its acid form, is lightly-crosslinked and water-insoluble. However, it is not highly water-swellaable, and thus is not a superabsorbent material (Bashaw col. 1 lines 61-63 and col. 3 lines 17-29). Thus, it is a *necessary* step in Bashaw to submit the copolymer, after the paper product has been made, to alkaline treatment to convert the copolymer into a salt form, such that it becomes highly water-swellaable, and thus a superabsorbent material (Bashaw col. 3 lines 17-29 and col. 3 lines 45-48). Thus, one of ordinary skill in the art would recognize that for the polymer to be considered a superabsorbent material, it must be in its salt form.

² Thus, the aqueous surfactant solution contains between about 95 to about 99.998 percent water.

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

copolymer can be directly fabricated into absorbent articles (Bashaw col. 3 lines 6-9).

In general, Howe is directed to cleaning compositions for particulate and greasy soils, suitable for use on painted and waxed surfaces such as auto bodies, that is capable of retaining the foaming and cleaning properties of a car wash yet is capable of removing greasy substances with cold water (Howe col. 2 lines 6-12). In one embodiment, the cleaning composition comprises from about 5 to about 25 weight percent of an anionic and/or nonionic surfactant, and 2 to 8 weight percent of at least one terpene (Howe col. 2 lines 24-28). In another embodiment, the cleaning composition comprises from about 5 to about 25 weight percent of an anionic and/or nonionic surfactant, and 2 to 8 weight percent of at least one fatty acid alkyl ester of the formula:



wherein R₁ is an alkyl group having from about 6 to about 18 carbons, and R₂ is an alkyl group having from 1 to about 5 carbon atoms (Howe col. 2 lines 28-39). Howe does not disclose superabsorbent materials, and Howe is not directed to absorbent articles in general. It appears that the Office may merely be combining Howe with Bashaw for the purpose of allegedly showing that cetyl dimethylamine oxide is an equivalent structure known in the art of lauryl dimethylamine oxide, and for no other purpose with respect to the rejections (Office Action mailed March 23, 2007, page 5).

As to independent claims 22 and 34, the Office contends that Bashaw discloses a permanently wettable superabsorbent material and method of making the absorbent comprising: treating the superabsorbent material with a surfactant solution (Office Action mailed March 23, 2007 page 4). Applicants respectfully disagree.

First, as explained above and in footnote 1, Bashaw does not treat a superabsorbent material (i.e., a copolymer in its salt form) with a surfactant. Rather, Bashaw teaches combining a copolymer in its acid form with an aqueous surfactant solution to form a dispersion, which is then mixed with a cellulosic fiber

³ *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, No. 06-1402 (Fed. Cir. May 9, 2007) See also *KSR Int'l Co. v. Teleflex, Inc., et al.* 127 S.Ct. 1727, 1731-1732 and 1741-1743 (2007).

⁴ *Id.*

⁵ M.P.E.P. §2142 further provides that in order to reach a proper determination under 35 U.S.C. §103(a), the Examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. Knowledge of Applicants' disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences." The tendency to resort to "hindsight" based upon Applicants' disclosure is often difficult to avoid due to the very nature of the examination process. However, as stated by the Federal Circuit, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. *Grain Processing Corp. v. American-Maize-Products, Co.*, 840 F.2d 902, 904 (Fed. Cir. 1988).

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

slurry.

Second, when the limitations of Applicants independent claims 22 and 34 are met, a previously hydrophobic surface of the superabsorbent material becomes permanently wettable. Applicants disclose that one reason for obtaining the permanently wettable superabsorbent material is that the surfactant is able to form ionic bonds with the superabsorbent material, thus permanently attaching the surfactant to the superabsorbent material (Specification page 8 lines 1-15). In contrast, Bashaw utilizes the surfactant for the sole purpose of dispersing and distributing the copolymer particles within the pulp slurry (Bashaw col. 2 lines 1-5). One of ordinary skill in the art would therefore recognize that the surfactant (i.e., surface active agent) would change the surface tension of the pulp slurry to allow the copolymer particles to disperse and distribute as desired (Bashaw col. 2 lines 1-5 and col. 4 lines 36-40). That is why in the preferred embodiment of Bashaw, the dispersion of copolymer particles in the aqueous surfactant solution is added directly to the pulp slurry (Bashaw col. 2 lines 6-14, col. 5 lines 23-27 and col. 6 lines 61-64). However, even in the alternative embodiment where the copolymer/surfactant dispersion is filtered and dried before addition to the pulp slurry, if the surfactant were permanently attached to the copolymer particle, it could not properly interact with the pulp slurry (i.e., modify the surface tension of the pulp slurry) to obtain the desired distribution of copolymer within the pulp slurry (Bashaw col. 2 lines 1-5 and col. 2 lines 14-16).

In addition, Bashaw demonstrates concern about foaming of the pulp slurry if too much surfactant is utilized (Bashaw col. 4 lines 40-42). One of ordinary skill in the art would readily recognize that if the surfactant were permanently attached to the copolymer, foaming would not be a concern. Thus, Bashaw clearly teaches away from permanently attaching the surfactant to the copolymer.

The Office also contends that Bashaw discloses the crosslinked copolymer is further activated with methanol, dried and processed in fiber form (Office Action mailed March 23, 2007 page 4). Applicants note that, as discussed above, the lightly-crosslinked copolymer of Bashaw referred to by the Office is a maleic anhydride copolymer in acid form, and is therefore not a superabsorbent material as required by independent claims 22 and 34 of Applicants' invention (Bashaw, col. 2 lines 19-22, col. 2 lines 45-53 and footnote 1).

The Office also contends that the surfactant solution of Bashaw includes an amount of water sufficient to solvate the surface of the superabsorbent material but less than sufficient to cause significant swelling of the superabsorbent material (Office Action mailed March 23, 2007 pages 4-5). Further, the Office alleges that Bashaw discloses surfactants similar to the surfactants taught in the present specification page 6, line 25 through page 7, line 7 (Office Action mailed March 23, 2007 page 5). In particular, the Office believes Bashaw discloses cetyl dimethylamine oxide (*Id.*). The Office contends that Howe shows that cetyl dimethylamine oxide is an equivalent structure known in the art of

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

lauryl dimethylamine oxide (*Id.*). Additionally, the Office believes that since these two surfactants are art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute cetyl dimethylamine oxide for lauryl dimethylamine oxide, which applicant discloses is a suitable surfactant having the claimed functional groups (*Id.*).

Applicants respectfully disagree that Bashaw teaches a surfactant solution which includes an amount of water sufficient to solvate the surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material.

First, as discussed above, Bashaw does not teach that the surfactant has been applied to a superabsorbent material as a surfactant solution, as required by Applicants' independent claims 22 and 34. Rather, Bashaw teaches placing a copolymer in its acid form into an aqueous surfactant solution to form a dispersion (Bashaw col. 2 lines 6-11).

Second, Bashaw teaches that a suitable surfactant solution contains between about 95 and 99.998 percent by weight water (Bashaw col. 4 lines 42-47). In contrast, Applicants teach that a surfactant solution having an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material, includes an amount of water that is only from 0.5 to 30 weight % by total weight of the solvent (Specification page 7 lines 27-28). Thus, one of ordinary skill in the art would readily recognize that a surfactant solution contain between about 95 and 99.998 weight % water would not be "less than sufficient to cause significant swelling of the superabsorbent material" as required in independent claims 22 and 34.

Thus, Bashaw does not teach a similar surfactant solution as required by Applicants' invention.

In addition, independent claims 22 and 34 require that the superabsorbent material have a hydrophobic surface. Such hydrophobic surface may be present based on the process by which the superabsorbent material is made, such as by a spinning process, or for other reasons (Specification page 3 lines 13-14 and page 4 lines 15-19). In contrast, as discussed above, the lightly-crosslinked copolymer of Bashaw referred to by the Office is a maleic anhydride copolymer in acid form, and is therefore not a superabsorbent material as required by independent claims 22 and 34 of Applicants' invention (Bashaw, col. 2 lines 19-22, col. 2 lines 45-53 and footnote 1). In addition, even if Bashaw had disclosed a superabsorbent material, it would tend to be hydrophilic since Bashaw describes that when the copolymer (in acid form) is produced, it is pulverized in a high speed attrition mill (Bashaw col. 5 lines 19-21). This would have the effect of exposing hydrophilic groups, such as carboxyl groups and carboxylic acid groups for example (e.g., Specification page 4 lines 11-13). One of ordinary skill in the art would readily recognize that the exposure of hydrophilic groups would result in a superabsorbent

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

material that is also hydrophilic.

The Office has clearly failed to meet its burden under number (1) of MPEP §2143, as Bashaw does not disclose a superabsorbent material and a surfactant; where the superabsorbent material has a hydrophobic surface; where the surfactant has been applied to the superabsorbent material as a surfactant solution; and where the surfactant solution includes an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material.

iii. Requirement (2) of the test under M.P.E.P. §2143 has not been met.

With respect to requirement (2), one of ordinary skill in the art would not be motivated to combine Howe with Bashaw to result in Applicants' invention. In particular, Bashaw is directed to distributing a maleic anhydride copolymer (in its acid form) in a cellulosic pulp slurry through the use of a surfactant solution which contains between about 95 and 99.998 weight percent water (Bashaw col. 1 line 61 – col. 2 line 24 and col. 4 lines 42-46). The pulp slurry/copolymer mixture can be dried to make paper, paper board or molded pulp products and can be fabricated into absorbent articles (Bashaw col. 2 lines 22-24 and col. 3 lines 8-9). In contrast, Howe is directed to cleaning compositions for particulate and greasy soils, suitable for use on painted and waxed surfaces such as auto bodies, that is capable of retaining the foaming and cleaning properties of a car wash yet is capable of removing greasy substances with cold water (Howe col. 2 lines 6-12). Howe does not disclose superabsorbent materials or cellulosic pulp, and Howe is not directed to absorbent articles. Thus, one of ordinary skill in the art, using common sense, would not be motivated to combine Howe with Bashaw.

In addition, Bashaw is directed to distributing a maleic anhydride copolymer (in its acid form) in a cellulosic pulp slurry through the use of a surfactant solution which contains between about 95 and 99.998 weight percent water (Bashaw col. 1 line 61 – col. 2 line 24 and col. 4 lines 42-46 and footnote 1). The copolymer is utilized in a finely divided or chopped fiber form, such by use of a pulverizing process (Bashaw col. 2 lines 6-10 and col. 5 lines 19-22). Thus, as discussed above, if the material had been a superabsorbent material, it would have been in hydrophilic form since the mechanical chopping and/or pulverizing would expose hydrophilic groups, thus removing the need to make the material permanently wettable. In addition, as discussed above, Bashaw discloses the use of a surfactant solution which contains between about 95 and 99.998 weight percent water, which one of ordinary skill in the art would readily recognize as causing significant swelling of a superabsorbent material since Applicants disclose that the water content should be no greater than 30% by weight (Bashaw col. 1 line 61 – col. 2 line 24 and col. 4 lines 42-46 and Specification page 7 lines 27-30)

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

Thus, one of ordinary skill in the art, using common sense, would not be motivated to utilize Bashaw on its own, or to combine or modify the teaching of Bashaw with the teaching Howe to obtain Applicants' invention.

An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of the case. The common sense of those skilled in the art can demonstrate why some combinations would have been obvious where others would not.³ As noted in M.P.E.P. §2142, in establishing obviousness, the mere fact that the references can be combined to arrive at the claimed subject matter does not render the resultant combination obvious, unless the prior art also suggests the desirability of the combination. *In re Mill*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). As recently set forth by the Supreme Court in *KSR International Co. v. Teleflex, Inc., et al.*, the reason to combine the elements of the prior art in the claimed fashion must be apparent to one skilled in the art.⁴ A close reading of the cited references clearly indicates that the combination of claimed elements would not have been apparent to one skilled in the art without Applicants' disclosure as a blueprint (which the Office had the benefit of utilizing).⁵ The Office has clearly failed to meet its burden under number (2) of MPEP §2143, as there is no apparent reason for one skilled in the art to modify and/or combine the references to arrive at Applicants' invention. It simply would not have been obvious to one skilled in the art to arrive at Applicants' claimed combinations.

iv. Requirement (3) of the test under M.P.E.P. §2143 has not been met.

With respect to requirement (3), since Bashaw, in view of Howe, do not teach or suggest all of the claim limitations of Independent claims 22 and 34, as well as their respective dependent claims, and they do not provide motivation to do so, there would not be a reasonable expectation of success to arrive at Applicants' invention.

b. Claims 22-26, 27, 29-32, 34 and 35 are not unpatentable over Bashaw in view of Howe.

Summarizing, Applicants' invention could not have been contemplated without the use of the teachings of Applicants. Additionally, the Final Office Action has not established a prima facie case that the particular combination of components called for by the Applicants' claims would be suggested alone, or by a proper combination of the cited references. To the contrary, it is readily apparent that when each of the cited references is considered in its entirety and each reference is taken as a whole, the references alone, and in combination, would not teach applicants' claimed invention. In addition, one of ordinary skill in the art would not be motivated to combine Bashaw with Howe to arrive at

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

Applicants' invention. Therefore, it should now be readily apparent that Bashaw in view of Howe do not teach or suggest each and every element of Applicants' invention set forth in the pending independent claims, as well as their respective dependent claims. Accordingly, the rejection of claims 22-26, 27, 29-32, 34 and 35 as being unpatentable over Bashaw, in view of Howe, should be reversed.

2. Claims 28, 33, 36, and 39 are not unpatentable over Bashaw in view of Howe, and further in view of U.S. Patent No. 6,217,890 issued to Paul et al. (hereinafter "Paul").

As to claim 28, the Office believes Bashaw/Howe discloses the present invention substantially as claimed. However, the Office believes Bashaw/Howe does not disclose the claimed group of materials. The Office also believes Paul discloses high absorbency materials in the claimed group as a natural alternative to synthetic high absorbency materials (col. 25, lines 25-40). Therefore, the Office believes that because the natural materials as disclosed in Paul are art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the natural materials for the synthetic material, such as maleic anhydride disclosed in the Bashaw reference.

As to claims 33 and 36, the Office believes Bashaw/Howe discloses the paper product is highly absorbent (col. 7, lines 18-20). However, the Office believes Bashaw/Howe does not specifically disclose the fiber in a disposable absorbent product as claimed. The Office believes Paul discloses a similar treated superabsorbent material for use in a diaper comprising a liquid-permeable topsheet 22, a backsheet 20 attached to the topsheet, and an absorbent structure 24 made with a treated superabsorbent fiber positioned between the topsheet and the backsheet for the benefit of having highly absorbent material in a relatively thin absorbent article (Paul col. 24, line 52 through col. 25, line 52). Further, the Office believes it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the invention of Bashaw/Howe into a disposable absorbent article as claimed, since the invention of Bashaw/Howe provides a highly absorbent article, which both references teach is desired.

Claim 39 was previously canceled and is not currently pending.

a. Claims 28, 33, and 36 are not obvious over Bashaw in view of Howe, and in further view of Paul.

Paul discloses a superabsorbent material for use in a diaper comprising a liquid-permeable

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

topsheet, a backsheet attached to the topsheet, and an absorbent structure made with a treated superabsorbent fiber positioned between the topsheet and the backsheet for the benefit of having highly absorbent material in a relatively thin absorbent article (Office Action mailed March 23, 2007 page 6). However, Paul does not overcome the deficiencies of Bashaw in view of Howe, as discussed above. Because the underlying independent claims 22 and 34 are patentable for the various reasons discussed above, this respective dependent claims 28, 33 and 36 are similarly patentable. Accordingly, the rejection of this claim as unpatentable over these references and should be **reversed**.

Conclusion

For the reasons set forth in the above arguments, it is respectfully submitted that the rejections under 35 USC Section 103(a) based upon Bashaw, in combination with Howe, and then Paul, should be **reversed**. It is respectfully submitted that the Final Office Action has not established a prima facie case since one of ordinary skill in the art could not properly combine the cited references. It is readily apparent that when each of the cited references is considered in its entirety and each reference is taken as a whole, each reference alone would not teach applicant's claimed invention. Only in light of applicant's present disclosure and the impermissible use of hindsight could a person of ordinary skill be directed to the significant changes and modifications needed to reconfigure the various prior taught components to arrive at applicant's claimed invention. It is, therefore, readily apparent that the invention called for by applicant's claims is patentable over the cited references.

Accordingly, it is respectfully submitted that claims 22 – 36 are in allowable condition, and that the rejections in the Final Office Action should be **reversed**.

Please charge the \$500.00 fee (fee code 1402), pursuant to 37 C.F.R. 41.20(b)(2), for filing this Appeal Brief to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875. Any additional prosecutorial fees which are due may also be charged to deposit account number 11-0875. If a fee is required for an extension of time under 27 C.F.R. 1.136 not accounted for above, such extension is requested and should also be charged to our Deposit Account.

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

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Respectfully submitted,

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Bryan R. Rosiejka

K-C Docket No.: 15,105.1
Serial No.: 10/810,977

Claims Appendix

The claims on appeal are:

Claims 1-21. (canceled)

Claim 22. A permanently wettable superabsorbent material comprising:

a superabsorbent material; and

a surfactant;

wherein the superabsorbent material has a hydrophobic surface;

wherein the surfactant has at least one reactive functional group that is reactive with the superabsorbent material;

wherein the surfactant has at least one non-reactive functional group that is non-reactive with the superabsorbent material;

wherein the surfactant has been applied to the superabsorbent material as a surfactant solution; and

wherein the surfactant solution includes an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material.

Claim 23. The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is a fiber.

Claim 24. The permanently wettable superabsorbent material of claim 22 wherein said surfactant solution includes a solvent to said surfactant but a non-solvent to said superabsorbent material.

Claim 25. The permanently wettable superabsorbent material of claim 22 wherein said permanently wettable superabsorbent material has a floating time of less than 30 seconds, as measured by the Flotation Time procedure.

Claim 26. The permanently wettable superabsorbent material of claim 22 wherein said permanently wettable superabsorbent material has a reduction in surface tension of saline of less than about 30% when compared to an untreated superabsorbent material, as measured by the Surface Tension Test.

K-C Docket No.: 15,105.1

Serial No.: 10/810,977

Claim 27. The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is selected from the group consisting of alkali metal salts of polyacrylic acids, polyacrylamides, polyvinyl alcohol, ethylene maleic anhydride copolymers, polyvinyl ethers, hydroxypropylcellulose, polyvinylmorpholinone, and polymers and copolymers of vinyl sulfonic acid, polyacrylates, polyacrylamides, polyvinyl amines, polyallylamines, and polyvinylpyrrolidone.

Claim 28. The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is selected from the group consisting of agar, algin, carrageenan, starch, pectin, guar gum, chitosan, and the like, modified natural materials such as carboxyalkyl cellulose, methyl cellulose, hydroxyalkyl cellulose, chitosan salt, dextran, and the like.

Claim 29. The permanently wettable superabsorbent material of claim 22 wherein said at least one reactive functional group is selected from the group consisting of quaternary ammonium groups, amino groups, carboxyl groups, sulfonate groups, phosphate groups, and their corresponding acid groups.

Claim 30. The permanently wettable superabsorbent material of claim 24 wherein said solvent is selected from the group consisting of isopropanol, methanol, ethanol, butyl alcohol, butanediol, butanetriol, butanone, acetone, ethylene glycol, propylene glycol, glycerol, and mixtures thereof.

Claim 31. The permanently wettable superabsorbent material of claim 22 wherein said water is present from about 1 to 10% by total weight of the solvent.

Claim 32. The permanently wettable superabsorbent material of claim 22 wherein said surfactant is applied to said superabsorbent material when said hydrophobic surface of said superabsorbent material is sufficiently solvated to promote reaction between said at least one reactive functional group and said superabsorbent material.

Claim 33. A disposable absorbent product comprising a liquid-permeable topsheet, a backsheet attached to the topsheet, and an absorbent structure comprising the permanently wettable superabsorbent material of claim 22 positioned between the topsheet and the backsheet.